

# Appendix 5-D

## Toxic Materials & Handling

## TOXIC MATERIALS AND HANDLING

Material that is contaminated with oil or grease or any other potentially acid or toxic matter, as determined by testing, will be placed against the highwall and covered with a min of 4 ft of non-acid and non-toxic forming fill material and reclaimed. Interim isolation of such material will be by use of berms created by a backhoe or loader.

Acid and toxic forming coal mine waste and material contaminated with coal, will be placed against the highwall and buried beneath a min of 4 ft of non-acid and non-toxic forming fill material during reclamation. See [R645-301-540](#).

## POTENTIAL HAZARDOUS WASTES

The following list includes the products which are used or may be used within the mine permit area, that are capable of producing hazardous wastes;

Diesel Fuel	Gasoline	Coal Oil
Carburetor Cleaners	Engine Degreaser	Windshield Washer Fluid
Lead Acid Batteries	Blasting Products	Solvents (Flash- point < 140°F)
Paints	Thinners	Dicers
Hydraulic Oil		

These products will be consumed in use or recycled to the extent possible to avoid costly disposal and company liability. Any of these or other materials that become potentially hazardous and their containers will be disposed of in the proper manner, at an approved disposal site.

# COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601

AREA CODE 312 726-8434



## Reply to

Instrument Analysis Division  
490 Orchard Street  
Golden, CO 80401

November 23, 1981

Phone: 303-278-9521

Mr. Jack Blair  
Commercial Testing & Engineering Co.  
139 South Main Street  
Helper, UT 84526

Co-op Mining Co.  
Lab No. 57-7609

Re: IAD #97-H654-335-01

## Analytical Report

One sample was received for analyses on October 28, 1981. This sample was given our identification IAD #97-H654-335-01.

A portion of the sample ( $\approx 100$  g) was extracted at pH<sub>5</sub> for 24 hours according to the procedures of EPA/Test Methods for Evaluating Solid Wastes, SW-846, 1980, EP Toxicity. The sample required  $\approx 170$  mls of 0.5 N acetic acid to adjust the pH to 5. The extracted solution was brought to volume (2000 ml) and filtered with a 0.45  $\mu$ m membrane filter. A portion of the filtered extract solution was acidified with nitric acid prior to metals analyses.

The solution was analyzed for Lead, Silver, Barium, Cadmium, and Chromium by flame atomic absorption; for Arsenic and Selenium by hydride generation atomic absorption; and for Mercury by cold vapor flameless atomic absorption using a permanganate/persulfate digestion and the gold amalgamation analytical technique to concentrate the Mercury.

The results of these determinations are presented in Table No. I and are reported in milligrams per litre (mg/L) in the filtered extract solution. The EP Toxic maximum contaminant levels are also presented.



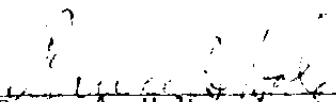
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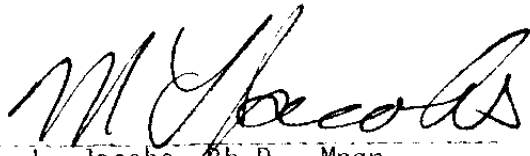
Table No. I  
(mg/L)

EP Toxicity

<u>Parameter</u>	<u>Co-Op Mining 57-7609</u>	<u>Maximum Contaminant Levels</u>
Arsenic	<0.001	5.0
Selenium	<0.001	1.0
Mercury	0.0004	0.2
Silver	<0.005	5.0
Barium	1.1	100
Chromium	<0.01	5.0
Cadmium	<0.005	1.0
Lead	<0.05	5.0

If there are any questions concerning these results, please call.

  
\_\_\_\_\_  
Bruce A. Hale  
Section Supervisor

  
\_\_\_\_\_  
M. L. Jacobs, Ph.D., Mngr.  
Instrumental Analysis Div.

BAH/cl

# COMMERCIAL TESTING & ENGINEERING CO.



July 22, 1983

Phone 303-278-9521

Reply to  
Instrumental Analysis Division  
10 Orchard Street  
Golden, CO 80401

Mr. Jack Blair  
CT & E Co.  
224 South Carbon Ave.  
Price, Utah 84501

CO-OP MINING COMPANY  
Pond Sample  
Lab No. 57-13312

Re: IAD # 97-M179-335-01

## Analytical Report

One coal sample was received for analysis on July 12, 1983.  
This sample was assigned our IAD identification # 97-M179-335-01.

The sample was prepared to No.10 mesh size in accordance with the procedure of U.S.D.A. Handbook #60. Electrical Conductivity and pH were determined in accordance with the same publication.

Acid/Base Potential was determined in accordance with the procedure of the Environmental Protection Agency, EPA-670/2-74-070. This procedure is used for the Wyoming DEQ and in telephone conversation with the Utah Division of Oil, Gas & Mining we were advised that this procedure is acceptable for the requirements of the State of Utah.

The results of these determinations are presented in Table No. 1 and are reported in units as indicated in the Table.

Table No. 1

<u>Parameter</u>	<u>57-13312</u>
pH, paste (Standard Units)	7.6
Electrical Conductivity ( $\mu$ mhos/cm)	195
Acidity Potential*	0
Neutralization Potential*	29.8
Acid/Base Potential*	29.8

\*Values are reported in Tons  $\text{CaCO}_3$  Equivalent / 1000 tons.

Texture determination was not performed as the sample is carbollithic and thus the determination of Sand, Silt and Clay fractions is not applicable in this case.



If you have any questions concerning these results, please call.

Harold A. Connell

Harold A. Connell  
Assistant Lab Manager

Robert L. Taylor

R.L. Taylor, Ph.D. Manager 2-2 9-2 83  
Instrumental Analysis Division

Table II

Parameter	Roof	Coal	Floor
Acid Potential,	1	15	<1
tons $\text{CaCO}_3$ /1000 tons			
Neutralization Potential,	595	6.3	488
tons $\text{CaCO}_3$ /1000 tons			
Clay Content, Wt. %	---	---	25.4

If you have any questions concerning these results, please feel free to call.

Martha L. Turner  
Martha L. Turner  
Supervisor  
Environmental Section

MLT/vmc



# COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (312) 953-9300



PLEASE ADDRESS ALL CORRESPONDENCE TO  
224 SO. CARBON AVE. PRICE UT 84501  
OFFICE TEL. (801) 637-7540

Co-op Mining Co.  
P.O. Box 300  
Huntington, Utah 84528

July 7, 1986

Sample submitted by  
Mel Coonrod

Kind of sample  
reported to us Soil

Roof Sample  
Coal Sample  
Floor Sample

Sample taken at Hiawatha Seam

Sample taken by Mel Coonrod

Date sampled 6-1-86

Date received 6-2-86

Analysis report no. 57-21437,38,39

## SULFUR FORMS

	<u>Roof</u>	<u>Coal</u>	<u>Floor</u>
Pyritic Sulfur	0.06	0.01	0.02
Sulfate Sulfur	0.01	0.01	0.02
Organic Sulfur (Diff.)	xxxx	0.56	xxxx
Total Sulfur	xxxx	0.58	xxxx

Reported As Dry Basis Only

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Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO  
490 ORCHARD ST. GOLDEN, CO 80401  
TELEPHONE (303) 278-9521

Commercial Testing & Engineering  
224 So. Carbon Avenue  
Price, Utah 84501

Date: July 03, 1986  
IAD #97-W406-335-03  
Received: 06/18/86

Material: Soil

Procedure: EP Toxicity per EPA, Hazardous Waste and Consolidated  
Permit Regulations, Federal Register, Monday,  
May 19, 1980.  
Acid Potential, Neutralization Potential and Clay Content  
per EPA, 600/2-78-054.

Results: EP Toxicity reported in milligrams per Liter (mg/L), on  
an extract basis.  
Acid Potential and Neutralization Potential reported as  
tons  $\text{CaCO}_3$ /1000 tons material.  
Clay Content reported in weight percent (wt. %).

Table I  
EP Toxicity

Parameter	Roof	Coal	Floor
Arsenic, As	<0.001	<0.001	<0.001
Barium, Ba	<0.8	<0.8	<0.8
Cadmium, Cd	<0.006	<0.006	<0.006
Chromium, Cr	<0.02	<0.02	<0.02
Lead, Pb	<0.04	<0.04	<0.04
Mercury, Hg	<0.0002	<0.0002	<0.0002
Selenium, Se	<0.002	<0.002	<0.002
Silver, Ag	0.017	<0.008	0.019
initial pH, s.u.	9.3	7.3	9.5
final pH, s.u.	6.9	4.9	5.1
mLs acetic acid added, per 100g sample	400	50	400



Inter-Mountain Laboratories, Inc.

2506 West Main Street

Farmington, New Mexico 87401

Tel. (505) 326-4737

CO - OP MINING COMPANY  
HUNNINGTON, UTAH

Date Reported: March 7, 1989

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Lab No.	Location	Depth	pH s.u.	EC mmhos/cm @ 25C	Satur- ation %	Calcium meq/l	Magnesium meq/l	Sodium meq/l	SAR	Sand %	Silt %	Clay %	Texture	Organic Carbon %
3911	SED. POND "A" 1	0.0-0.0	7.9	1.00	36.6	4.46	2.93	4.14	2.15	90.9	9.1	0.0	SAND	8.78
3912	SED. POND "A" 2	0.0-0.0	7.7	2.31	32.2	16.9	9.68	4.06	1.11	89.1	10.7	0.2	SAND	9.22
3913	SED. POND "A" 3	0.0-0.0	8.7	1.18	37.1	7.59	3.30	1.52	0.65	99.3	10.7	0.0	SAND	9.33
3914	SED. POND "A" 4	0.0-0.0	7.9	1.26	38.4	6.20	4.52	1.75	0.76	90.3	19.7	0.0	LOAMY SAND	8.86
3915	SED. POND "A" 5	0.0-0.0	8.0	0.90	36.8	4.11	3.05	1.90	1.00	90.9	19.1	0.0	LOAMY SAND	9.12



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Lab No.	Location	Depths	Total Sulfur %	T.S. ABP t/1000t	Pyritic Sulfur %	Organic Sulfur %	NP	ABP	AB	Boron ppm	Selenium ppm
3911	SED. POND "A" 1	0.0-0.0	0.38	160.	0.01	0.35	171.80	159.93	11.87	0.28	0.02
3912	SED. POND "A" 2	0.0-0.0	0.34	176.	0.03	0.30	186.42	175.80	10.62	0.47	<0.02
3913	SED. POND "A" 3	0.0-0.0	0.34	160.	<0.01	0.34	171.01	160.39	10.62	0.40	<0.02
3914	SED. POND "A" 4	0.0-0.0	0.35	168.	<0.01	0.35	179.17	168.23	10.93	0.49	0.02
3915	SED. POND "A" 5	0.0-0.0	0.34	158.	0.01	0.33	169.08	158.45	10.62	0.39	<0.02

Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neut. Pot.= Neutralization Potential